

WINTERING OF BEES

Successful bee-keeping calls for the right kind of attention to bees in the fall and winter. To guide bee-keepers in providing proper care at this season, this folder is issued.

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The principles of successful wintering of bees are now so well understood that severe winter losses, so common in the past, can be almost entirely prevented.

Preparations for wintering begin in August or immediately after the removing of supers when the amber fall honey flow begins. This is the period of requeening. All colonies having old or failing queens should be requeened. Young and prolific queens will produce brood late in the fall. It is the late-hatched bees that survive until spring. In colonies with old queens that stop laying in early fall, mortality increases and the colony dwindles during the late winter months.

Weak Colonies United

The next step for successful wintering is to unite all weak colonies. Colonies to be united are those that do not fill the brood chamber in the middle of September. A weak colony can not generate heat enough to keep warm during the winter nor can it preserve the heat generated. The result is a heavy consumption of honey, and the motion to keep warm exhausts the strength of the colony before spring.

Winter Feeding Methods

After uniting, the bees must be fed for winter. The time for fall feeding is late

in September or at the beginning of October, after brood-raising has stopped. A sirup is made of two parts of sugar and one part of water boiled for thirty minutes, with one ounce of tartaric acid added for each 100 lbs. of sugar. The acid inverts the sugar. Feeding is done with 10-lb. pails inverted over the frames. The cover should have about twenty holes of shingle nail size. The hive should be level. Evening is the time to feed. Each colony should get one pail regardless of weight; the light ones, two or more until they have 45 lbs. of sirup stored in frames.

In wintering bees on exclusively natural stores, the beekeeper runs the risk of having honey dew or impure fall honey next to the winter nest. Impure food will fill the large intestine of bees early in the winter, causing uneasiness, then dysentery and death of the colony.

Another excellent way to feed bees for winter is to give each colony a shallow super full of white June and July honey just before packing them away for winter. Summer honey and sugar sirup are the best bee food in winter.

Now the bees are ready and should be left alone to seal with propolis the cover and other cracks. The entrance should be contracted to one inch.

Outdoor and Indoor Wintering

The next step is to prepare the wintering cases if you winter the bees outdoors, or the cellar if you winter indoors.

For wintering the bees outdoors use packing cases holding four colonies. Insulate with shavings, sawdust or dry leaves—6 inches on the bottom, 8 inches on the sides, and 12 inches on top. Allow a 6-inch by $\frac{7}{8}$ -inch adjustable entrance. Winter in two stories, giving each colony a super full of honey.

For wintering indoors choose a cellar that is reasonably dry, well ventilated, dark, and quiet. The chief benefit of cellar wintering is securing for the bees a steady temperature, which should be around 42° F. Changeable temperatures cause the bees to expand and contract their cluster with an expenditure of energy. Low temperatures cause them to eat and exercise to raise the heat of the cluster. High temperatures cause them to break the cluster and run around. Both high and low temperatures may cause the bees to start early brood-raising, much work and consumption of stores—resulting in waste of energy, dysentery, and short life.

The time to pack the bees for outdoor wintering is immediately after feeding—about October 1. The time to put away the bees in the cellar is at the beginning of the first cold wave in October. Carry

the bees in with the least disturbance possible, using a carrier. Place them a few inches above the cellar floor. Open the hive entrance full width. It is well to screen the entrance with a four-to-an-inch wire mesh against mice. Leave the cellar door open until the bees are quiet. Once a month, with a hooked wire, remove dead bees from the entrance. Watch your thermometer.

Good Care Brings Added Crop

Many beekeepers get along without using any of the precautions mentioned, but observations show that those who observe them get much larger honey crops next season.

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